

United States District Court, Northern District of Illinois

Name of Assigned Judge or Magistrate Judge	David H. Coar	Sitting Judge if Other than Assigned Judge	
CASE NUMBER	99 C 2785	DATE	9/7/2000
CASE TITLE	Vardon Golf, Inc. vs. Karsten Manufacturing Corporation		

[In the following box (a) indicate the party filing the motion, e.g., plaintiff, defendant, 3rd party plaintiff, and (b) state briefly the nature of the motion being presented.]

MOTION:

Karsten's motion for summary judgment

DOCKET ENTRY:

- (1) ☐ Filed motion of [use listing in "Motion" box above.]
- (2) ☐ Brief in support of motion due _____.
- (3) ☐ Answer brief to motion due _____. Reply to answer brief due _____.
- (4) ☐ Ruling/Hearing on _____ set for _____ at _____.
- (5) ☐ Status hearing[held/continued to] [set for/re-set for] on _____ set for _____ at _____.
- (6) ☐ Pretrial conference[held/continued to] [set for/re-set for] on _____ set for _____ at _____.
- (7) ☐ Trial[set for/re-set for] on _____ at _____.
- (8) ☐ [Bench/Jury trial] [Hearing] held/continued to _____ at _____.
- (9) ☐ This case is dismissed [with/without] prejudice and without costs[by/agreement/pursuant to]
☐ FRCP4(m) ☐ General Rule 21 ☐ FRCP41(a)(1) ☐ FRCP41(a)(2).
- (10) ☒ [Other docket entry] For the reasons stated in the attached memorandum opinion and order, Karsten's motion for summary judgment [#74] is GRANTED IN PART AND DENIED IN PART. The Court GRANTS Karsten's motion on Claim 3 for non-infringement with respect to both literal infringement and infringement under the doctrine of equivalents; GRANTS Karsten's motion on Claim 4 and Claim 5 for non-infringement with respect to both literal infringement and infringement under the doctrine of equivalents; GRANTS Karsten's motion on Claim 7 for non-infringement with respect to literal infringement; DENIES Karsten's motion on Claim 7 with respect to infringement under the doctrine of equivalents; GRANTS Karsten's motion for summary judgment on Claim 8 for non-infringement with respect to literal infringement; DENIES Karsten's motion on Claim 8 with respect to infringement under the doctrine of equivalents; GRANTS Karsten's motion on Claim 12 for non-infringement with respect to both literal infringement and infringement under the doctrine of equivalents; DENIES Karsten's motion on Claim 14 and Claim 15 for non-infringement with respect to both literal infringement and infringement under the doctrine of equivalents; and DENIES Karsten's motion judgment with respect to its invalidity defense on the '021 Patent.
- With respect to the '941 Patent, the Court GRANTS Karsten's motion for summary judgment on Claims 12 and 15 with respect to both literal infringement and infringement under the doctrine of equivalents.
- (11) ☒ [For further detail see order attached to the original minute order.]

No notices required, advised in open court.	ED-7 FILED FOR DOCKETING 00 SEP 12 PM 6:52	number of notices	Document Number 134
No notices required.		SEP 13 2000	
Notices mailed by judge's staff.		date docketed	
Notified counsel by telephone.		docketing deputy initials	
<input checked="" type="checkbox"/> Docketing to mail notices.		date mailed notice	
Mail AO 450 form.		Date/time received in central Clerk's Office	mailing deputy initials
Copy to judge/magistrate judge.			
mrl (LLC)	courtroom deputy's initials		

**IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION**

Vardon Golf Company, Inc.,)	
)	
Plaintiff,)	No. 99 C 2785
v.)	
)	HONORABLE DAVID H. COAR
Karsten Manufacturing Corporation)	
)	
Defendant.)	

MEMORANDUM OPINION AND ORDER

Plaintiff, the Vardon Golf Company, has sued Karsten Manufacturing alleging that it infringed on the inventions protected by U.S. Patent No. 5,401,021 called "Set of Golf Clubs With Enlarged Faces" ("the '021 Patent") and U.S. Patent No. 5,301,941 called "Golf Club With Increased Radius of Gyration and Face Reinforcement" ("the '941 Patent"). Before this Court are Karsten's motions for summary judgment and Vardon's cross-motions for summary judgment on Claim 3 of the '021 patent.

Background

Vardon owns the rights to two golf-club patents at issue in this case. The '021 Patent concerns "irons" and the '941 concerns "woods." The golf clubs covered by these inventions are of the "cavity back" or "perimeter weighted" style, where the weight of the golf club is not directly behind the place where the golfer ideally wants to hit the ball (a.k.a. "the sweet spot"), but instead, the weight is distributed on the perimeter of the club. Karsten makes both irons and woods of the perimeter-weighted type. Vardon claims that Karsten's ISI iron-type clubs and the TiSI woods infringe on the '021 and '941 Patents. Karsten has moved for summary judgment and in response, Vardon has cross-moved for summary judgment.

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Discussion

The United States Constitution empowers Congress to "promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries." U.S. Const. Art. I, § 8, cl. 8. Under the current state of patent law, "whoever without authority makes, uses, offers to sell, or sells any patented invention, within the United States or imports into the United States any patented invention during the term of the patent therefor, infringes the patent." 35 U.S.C. § 271(a) (1999). Claims for infringement take two forms – both of which have been charged here – literal infringement or infringement under the doctrine of equivalents. See, e.g., Graver Tank & Mfg. Co. v. Linde Air Products Co., 339 U.S. 605, 606 and 612(1950). Absent a genuine issue of material fact, the Court will grant summary judgment in favor of an alleged infringer in the context of literal infringement if no reasonable jury could determine that the accused device meets every limitation of the properly construed claims, see, e.g., Gentry Gallery, Inc. v. Berkline Corp., 134 F.3d 1473, 1476 (Fed. Cir. 1998), and in the context of the doctrine of equivalents if no reasonable jury could determine that a claim limitation is met in the accused device by an equivalent. See Warner-Jenkinson Co. v. Hilton Davis Chem. Co., 520 U.S. 20, 39 n.8 (1997).

To resolve the summary judgment motions on Vardon's infringement claims, this Court first must determine what it is that his patent pertains to (i.e., claim construction) and then must compare the patent to the allegedly infringing golf clubs. See, e.g., Rodime PLC v. Seagate Technology, Inc., 174 F.3d 1294, 1301-02 (Fed. Cir. 1999). Claim construction is purely a matter of law for the Court. See Markman v. Westview Instruments, Inc., 517 U.S. 370, 389 (1996); see also Vardon Golf Co. v. Supreme Golf Sales, Inc., No 89 C 2654, 1990 WL 114498 (N.D. Ill. July 20, 1990). To construe the claims at issue, the Court looks to intrinsic evidence

in the record, including the claim language, the specification language, drawings, and the prosecution history. See, e.g., Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed.Cir.1996). Once construed, the Court compares the claim to the allegedly infringing device. The infringement inquiry, while not a question of law, can be resolved on summary judgment in appropriate cases. See Fed. R. Civ. P. 56(e).

**Part I - U.S. Patent No. 5,401,021
Construction of Claim 3**

This Court has previously construed parts of Claim 3 in Vardon v. Golfsmith, et al., No. 99 C 2944 (N.D. Ill. June 6, 2000) Mem. Op. and Order at 3-5.¹ The dispositive "claim phrase" or "limitation" with respect to Claim 3 in this case, as in Vardon v. Golfsmith, is:

means for enlarging the ball striking face to the above value without increasing head weight including a ball striking reinforcing network in the rear cavity of the club head defined by the perimeter wall.

Col. 9, lines. 60-64 (emphasis added). A claim phrase that uses the word "means," presumptively invokes the sixth paragraph of 35 U.S.C. § 112 ("Paragraph Six"), see Rodine PLC v. Seagate Technology, Inc., 174 F.3d 1294, 1302 (Fed. Cir. 1999), which guides claim interpretation. See 35 U.S.C. § 112, ¶ 6. Paragraph Six provides that "[a]n element in a claim or a combination may be expressed as *a means or step for performing a specified function without the recital of structure, material or acts* in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." Id. (emphasis added). Two things will take a claim out of the plain language of Paragraph Six: first, failure to recite a function that corresponds with the means stated; and second, recitation of sufficient

¹ The Court has also construed phrases from Claims 4, 5, 7, 9, 11, 12, and 14 of the '021 Patent and phrases from Claims 12-18 of the '941 Patent.

structure, material, or acts to perform the function. As some courts say, in those instances the presumptive applicability of Paragraph Six is overcome. See, e.g., Rodine, 174 F.3d at 1302.

Paragraph Six applies in this case because neither of the conditions mentioned above is present. The language of Claim 3 at issue here ties a function ("enlarging the ball striking face to [6 in.² for the six iron]") to the word means. Consequently, the presumptive applicability of Paragraph Six is not overcome on this basis. The claim phrase also recites a structure ("a ball striking reinforcing network in the rear cavity of the club head defined by the perimeter wall"), but this structure is described in extremely generic terms. There is nothing "definite" about the structure described simply as a "reinforcing network," and Vardon has not demonstrated that the phrase has any commonly-understood meaning in the golf-club industry. See Mas-Hamilton Group v. LaGard, Inc., 156 F.3d 1206, 1213-14 (Fed. Cir. 1998) (analyzing a claim under Paragraph Six because the structural phrase "lever moving element" did not have a generally understood structural meaning in the relevant art). Thus, Claim 3 is properly construed under Paragraph Six.

Since Paragraph Six applies, Claim 3 covers "the corresponding structure . . . described in the specification and equivalents thereof." 35 U.S.C. § 112, ¶ 6. The only description of a "reinforcing network" in the entire specification is a "three-element-perimeter weighting" system. See Col. 5, lines 58-59. These three elements are "[1] the horizontal concave bar in the rear cavity, [2] a generally vertical bar also concave intersecting the horizontal bar, and [3] a unit cellular configuration that has a concave configuration similar to that of the cross bars . . . [that have] their minimum depth at the geometric center and [their] maximum depth around the perimeter of the club head." Col. 5, lines 54-62. Additionally, the same three elements are described in the preferred embodiment as the means for, among other things, increasing the area

of the club face. See Col. 7, lines 54-61. Thus, Claim 3 requires this three-element "reinforcing network" or its equivalents.

Comparison of Claim 3 to the Ping ISI Clubs

Karsten is entitled to summary judgment with respect to Claim 3 because the ISI clubs do not use the three-element structure disclosed in the '021 specification or an equivalent structure. To literally infringe on the means-plus-function claims of Vardon's patent, Karsten's clubs must have an "equivalent" structure and perform the identical function – both the structure and the function equivalents are required. See Mas-Hamilton Group, 156 F.3d at 1212. Although Karsten disputes whether the ISI clubs perform a function identical to the function performed by the clubs in Vardon's '021 Patent, (i.e., club face enlargement), the Court grants summary judgment to Karsten because the ISI clubs do not have an equivalent structure. Id.

The ISI irons do not have three-element structures. The ISI clubs have several elements in the cavity of the club, however, there is no unit cellular structure reinforcing the club face. For this reason, Karsten is entitled to summary judgment on Claim 3 with respect to both literal infringement and infringement under the doctrine of equivalents. Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533, 1535 (Fed. Cir. 1991) (where one claim element is completely missing, there is no literal infringement or infringement under the doctrine of equivalents).

Construction of Claim 4

Claim 4 also uses the term "means." As noted above, the use of the word "means" presumptively invokes Paragraph Six and the means-plus-function interpretive analysis. In this claim, as in Claim 3, the language of the claim ties a function ("for increasing the effective hitting area or sweet spot without increasing overall club head weight") to the word means. Consequently, the presumption of applying Paragraph Six is not overcome on this basis.

Claim 4 also recites a structure, but like the structure described in Claim 3 it is not sufficiently specific. Claim 4 and dependent Claim 5 both require:

a plurality of reinforcing elements integral with the perimeter wall and the cavity bottom wall *extending completely across the cavity*, said elements extending in a direction perpendicular to the bottom wall defined as element thickness, said element thickness being at its minimum value at the hitting area of the face wall and generally progressively increasing in value outwardly to the perimeter wall.

Col. 10, lines 31-38 (emphasis added). While Claim 4 describes many structural elements (e.g., multiple reinforcing elements that jut up in the rear cavity of the club), the phrase "extending completely across the cavity" does not have a commonly understood meaning in the golf-club industry and is not sufficiently specific to take the claim outside of Paragraph Six.

At first blush, this phrase seems fairly straightforward and definite. Consider an analogy between the shape of our country and a golf club. Few would find it controversial, for example, to describe a journey beginning in Northern Maine and ending in Southern California as one "extending completely across" the United States. Such a journey begins and ends at roughly opposite corners of the country and would likely² pass through or near the geographic center of the country. Similarly, a rib that extended from the top corner of the toe of the club to the lower corner of the heel would also likely qualify as extending "completely across the cavity."

Upon closer examination, however, the phrase "extends completely across the cavity" is actually quite vague. Would a journey from Northern Maine to Southern Florida "extend completely across" the United States? What about a journey from Virginia to Arizona? From North Dakota to Louisiana? These are more difficult questions to answer. Add to these journeys

² The necessity of the term "likely" points up further obfuscating questions. For example, if the Maine-to-California journey meandered down the Appalachian trail to Georgia and then headed due west to California, could it still be characterized as a journey that "extended completely across" the United States?

the possibility that they might or might not go near or through north central Kansas (the geographic center of the United States, see U.S. Geographical Survey, Science Challenge Quiz Site, Q & A No. 31 (http://www.usgs.gov/sci_challenge.html) and the question is even more complicated. To add further confusion to the mix, it is not at all clear that five separate journeys, beginning at various points on the United States border and ending somewhere in central Kansas, could be characterized as journeys that collectively "extend completely across" the United States.

The cavity defined in the rear of perimeter-weighted golf clubs have both somewhat flat and curved side walls. The cavities are, like the borders of the United States, irregularly shaped. As the analogies above make clear, it is insufficient to describe a reinforcing rib or series of ribs that "extend completely across" the rear cavity. Such a description would not inform a person versed in the art of golf-club manufacturing of the structure specified. Ironically, although Claim 4 requires more than Claim 7, its requirements are less definite because of vagueness of the phrase "extends completely across the cavity." This additional requirement obscures the claim rather than making it more definite.

Since Paragraph Six applies, Claim 4 must be construed to cover the "corresponding structure, material, or acts described in the specification and equivalents thereof." 35 U.S.C. § 116, ¶ 6. The structure described in the '021 Patent "for increasing the effective hitting area or sweet spot without increasing overall club head weight" Col. 10, lines 28-30, is a "three-element-perimeter weighting" system. See Col. 5, lines 58-59. The '021 Patent discloses no other structure for this purpose. These three elements are "[1] the horizontal concave bar in the rear cavity, [2] a generally vertical bar also concave intersecting the horizontal bar, and [3] a unit cellular configuration that has a concave configuration similar to that of the cross bars . . . [that have] their minimum depth at the geometric center and [their] maximum depth around the

perimeter of the club head." Col. 5, lines 54-62. Additionally, the same three elements are described in the preferred embodiment as the means for, among other things, increasing the area of the club face. See Col. 7, lines 54-61. Thus, Claim 4 requires this three-element "reinforcing network" or its equivalents.

Comparison of Claims 4 & 5 to the Ping ISI Clubs

Karsten is entitled to summary judgment for non-infringement with respect to Claim 4 for precisely the same reason that it is entitled to summary judgment on Claim 3. See infra Discussion regarding Comparison of Claim 3 to the Ping ISI Clubs. Since Claim 5 depends on Claim 4, Karsten is also entitled to summary judgment for non-infringement on Claim 5.³

Construction of Claim 7

One of the limitations with respect to Claim 7 reads as follows:

[a] means to reinforce the face wall and enlarge the effective hitting area of the golf club

Col. 10, lines 54-56. As noted above, the use of the word "means" presumptively invokes Paragraph Six and the means-plus-function interpretive analysis. In this claim, as in Claim 3, the language of the claim ties a function ("to reinforce the face wall and enlarge the effective hitting area of the golf club") to the word means. Consequently, the presumption of applying Paragraph Six is not overcome on this basis.

The claim phrase also recites a structure, which unlike Claim 3 is sufficiently specific. The structure is described as:

[1] *a progressive face wall reinforcing element* in the cavity [a] extending from the approximate center of the rear of the face wall outwardly in the cavity to the

³ Since the Ping ISI irons do not have the three-element reinforcing structure required by Claims 4 & 5, the Court does not rely on the further limitations of Claim 5 in granting Karsten's motion for summary judgment.

perimeter wall, [b] said element being integral with both the face wall and the perimeter wall, [and c] said reinforcing element incrementally increasing in height from the approximate center of the rear of the face wall to the perimeter wall,

[2] whereby the club face is supported by *at least one structural arch*.

Col. 10, lines 56-68 (emphasis, numbers and letters added). This structure is sufficiently detailed to take interpretation outside of the language of Paragraph Six. See, e.g., Cole v. Kimberly Clark Corp., 102 F.3d 524, 527 (Fed. Cir. 1997). Since the structure described is sufficiently detailed, it is not necessary also to link the means to a structure described in the patent specification or its equivalents. Id. Claim construction here focuses on the language itself.

Claim 7 describes both "*a progressive face wall reinforcing element*" and "*at least one structural arch*." Col. 10, lines 59-60, 67-8 (emphasis supplied). Whereas Claim 7 describes only a singular progressive face wall element, it seems also to require "at least one" structural arch. Although this number disagreement suggests two separate claim limitations, more than one arch could combine to make a single "element." Additionally, the reinforcing element and structural arch requirements are tied not by a conjunction, but by the word "whereby." This also suggests that the progressive face-wall element is further described as – not in addition to – a structural arch or set of arches. See Texas Instruments, Inc. v. U.S. ITC, 988 F.2d 1165, 1171-72 (Fed. Cir. 1993) ("the Commission correctly determined that the 'whereby . . .' clauses do not contain any limitations not inherent to the process found in [the] claims"). The description of the progressive face wall element confirms this reading. That element, which is integral with the face wall and the perimeter wall, is at its minimum height near the geometric center of the club and increases in height as it nears the perimeter wall, describes an arch or group of arches.

Although the element/arch height must increase as it moves away from the geometric center and towards the perimeter wall, the rate of increase is not dictated in the claim. Cf. Col. 11, lines

67-68 and Col. 12, lines 1-3 (describing a parabolically arched reinforcing bar). Thus the arch could be, for example, curved or flat. See, e.g., The American Heritage Dictionary 124, (2d Ed. 1982) (defining "arch" as "[a] structural device, esp.[ecially] of masonry, forming a curved, pointed or *flat* upper edge of an opening . . .") (emphasis added). Further, nothing in the language of Claim 7 requires the structural arch to span the entire cavity in the rear of the club. On the contrary, the claim language describes an arch or arches that are shortest at or near the geometric center of the club and increase in height as the arch moves towards the perimeter wall.

Comparison of Claim 7 to the Ping ISI Irons

Karsten is entitled to summary judgment for literal non-infringement on Claim 7. The Ping ISI irons have many, but not all of the limitations in Claim 7. The Ping ISI irons have several bars in the rear cavity of the club that reinforce the club face. These bars extend "from the approximate center of the rear of the face wall outwardly in the cavity to the perimeter wall." Col. 10, lines 60-62. The ribs, which together form a "reinforcing element" are also "integral with both the face wall and the perimeter wall." Col. 10, lines 63-64. The only truly disputed claim phrase is whether or not the "element" in the rear cavity of the Ping ISI clubs increases incrementally in height from the approximate center to the perimeter wall or not. An examination of the Ping ISI iron reveals that it does not. Col. 10, lines 66-68.

In support of its non-infringement assertion on this claim phrase, Karsten relies on the opinion of its expert, Professor Emeritus Donald L. Creighton. Professor Creighton concludes that the Ping ISI irons do not infringe on Claim 7 because, among other things, the reinforcing element does not increase in height, "point to point from the approximate center of the rear face wall to the surrounding perimeter wall." To support his conclusion, Dr. Creighton relies on a blurred, unmeasured, and unlabeled photocopy of a Ping ISI iron. Neither Karsten nor Vardon

have provided drawings or measurements revealing the dimensions of the golf club in the drawing.⁴ This bald assertion that the ribs do not increase in height, however, is not proper or sufficient support for a motion for summary judgment. The height change of the ribs as they extend towards the perimeter wall is still essentially unknown at this stage of the proceedings.

Notwithstanding the shortcomings of Professor Creighton's report, Karsten is still entitled to summary judgment for literal non-infringement. The reinforcing element in the rear of the ISI irons consists of not only five linear ribs but also of a ring surrounding a dot. From this ring-and-dot reinforcement, the five ribs extend toward the perimeter wall. The dot appears in the approximate center of the rear cavity. Outside the dot, the element height decreases substantially and then increases again at the ring surrounding the dot. Outside the ring, the reinforcing element again decreases dramatically. From there, the ribs begin. Thus, even despite the lack of evidence regarding the rib height, Karsten is still entitled to summary judgment for literal non-infringement because the reinforcing element as a whole decreases, increases and decreases (and possibly increases again) in height as it extends from the approximate center to the perimeter wall. This does not literally satisfy the language of Claim 7.

⁴ Although Karsten submits a photocopy of a Ping ISI iron, upon which Professor Creighton purports to rely in concluding that the reinforcing elements do not increase incrementally, this drawing is not labeled or marked in any way. Given the quality of the photocopy and the lack of corresponding measurements, it is an extremely poor substitute for the physical exhibit. It does not, contrary to Karsten's assertions, undisputedly show the lack of this claim element.

The sketches attached and unsworn declaration of James Stade is not relevant on this motion for summary judgment. See Fed. R. Civ. P. 56(e) (permissible forms of support for summary judgment include, among other things, affidavits but not unsworn declarations), cf. 28 U.S.C. 1746 (sworn declarations may be submitted in lieu of an affidavit). Even if Stade had sworn to his declaration, there are still no corresponding measurements in his sketches and Stade himself does not assert that all of the figures are proportionally accurate.

The analysis, however, is not as simple under the doctrine of equivalents. No evidence has been presented regarding the doctrine of equivalents on Claim 7. Thus it is inappropriate at this stage of the proceedings to determine whether the variations in height in reinforcing element in the rear cavity of the Ping ISI club is "equivalent" to the structure set forth in Claim 7. With respect to the doctrine of equivalents, Karsten's motion is denied.

Construction of Claim 8 and Comparison to Karsten's ISI Clubs

Karsten's motion for summary judgment of non-infringement on Claim 8 under the doctrine of equivalents is also denied.⁵ Claim 8 depends from Claim 7 and further requires "four weighting elements formed integrally with the forward wall each having a minimum depth near the center of the face wall and a maximum depth at the perimeter wall." The Ping ISI irons have four elements – indeed these irons have five ribbed "elements" – in the rear cavity of the club. As with Claim 7, however, it is unclear whether any of them arch or ramp from the center to the perimeter. For this reason, Karsten's motion with respect to Claim 8 is denied under the doctrine of the equivalents.

Construction of Claim 12 and Comparison to Karsten's ISI Iron Clubs

Karsten is also entitled to summary judgment on Claim 12. Claim 12 requires "a pair of crossed reinforcing bars" in the rear cavity of the club head. By its very language, Claim 12 requires a pair of bars (i.e., two bars) and requires that the pair cross. The Ping ISI irons have five bars. Also, none of these bars "cross." Instead, each arranged radially around a center ring at approximately equal intervals. None of the bars appear to even touch the ring, let alone touch or cross each other. Since this element is completely lacking, Karsten is entitled to summary

⁵ For the same reasons discussed in terms of Claim 7, Karsten is entitled to summary judgment on its defense of literal non-infringement as to Claim 8.

judgment on this claim for both literal infringement and infringement under the doctrine of equivalents. See Becton Dickenson, 922 F.2d at 798.

Construction of Claim 14

Claim 14 is in many respects similar to Claim 7. Whereas Claim 7 requires a "progressive face wall reinforcing element," however, Claim 14 requires a "plurality of face wall reinforcing . . . elements." Compare Col. 10, lines 59-60 with Col. 12, lines 12-3. Claim 14 does not require the reinforcement to be "progressive." It does, nevertheless, require that "at least one of the elements incrementally increas[es] in height from the approximate center of the rear of the face wall to the perimeter wall." Col. 12, lines 18-21. Unlike Claim 7, however, the entire "reinforcing element" need not be at its minimum point at the approximate center of the club. And, the entire element need not increase as it moves towards the perimeter wall. Put another way, a golf club described by Claim 14 could have several flat reinforcing elements only one of which "arched" or ramped from a low point near the center toward a high point integral with the perimeter wall.

Comparison of Karsten's ISI Iron Clubs to Claim 14

Karsten is not entitled to summary judgment for non-infringement with respect to Claim 14. Although Claim 14 only requires one element to increase incrementally in height relative to the cavity-bottom wall as it moves from the approximate center to the perimeter wall, as noted above with respect to Claim 7, Karsten has not provided sufficient evidence with respect to the height of any of the ribs. Without such evidence, it is impossible to tell whether any one of the reinforcing ribs "incrementally increas[es] in height from the approximate center of the rear

of the face wall to the perimeter wall." Since Karsten has not properly supported its motion for summary judgment, it is denied.⁶

Validity of the '021 Patent

Karsten is not entitled to summary judgment on its invalidity defense. Under the patent statutes, a patent enjoys a presumption of validity, see 35 U.S.C. § 282, which can be overcome only through clear and convincing evidence. See, e.g., United States Surgical Corp. v. Ethicon, Inc., 103 F.3d 1554, 1563, 41 USPQ2d 1225, 1232 (Fed.Cir.1997). "When evaluating a motion for summary judgment, the court views the record evidence through the prism of the evidentiary standard of proof that would pertain at a trial on the merits." Eli Lilly & Co. v. Bar Labs., Inc., Nos. 99-1262, 99-1303, 99-1263, 99-1264, 2000 WL 1114915, at *4 (Fed. Cir. Aug. 9, 2000) (citing Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 252-53 (1986)).

The pictures of prior art upon which Karsten relies, however, do not convincingly demonstrate that the '021 Patent is invalid. Karsten trots out and relies on photocopies of two clubs – Shear-Line and Pro/Tour Spectrum ("Spectrum") irons. Nowhere in its motion for summary judgment on its invalidity defense, however, does Karsten explain the specifications of these clubs. Of particular importance for both Claim 7 and Claim 14 is the "ramping" or "arching" character of reinforcing elements in the rear cavity of the clubs. Karsten, however, does not provide (other than by visual inspection of the photocopies) any means for determining whether the reinforcing elements (assuming the Shear-Line and Spectrum elements do reinforce the club face) increase in height relative to the cavity bottom wall as the element moves from the

⁶ Karsten is not entitled to summary judgment on Claim 15 for the same reasons articulated with respect to Claim 8. See infra.

approximate center to the perimeter wall. Karsten's motion for summary judgment on its defense of invalidity is therefore denied.

Part II - U.S. Patent No. 5,301,941

The primary focus regarding the '941 patent are several limitations found in Claim 12. Those three limitations are discussed below and their construction and application to the golf clubs at issue resolve Karsten's motion for summary judgment. Although Claim 15 does not depend on Claim 12, it has the second and third limitations discussed below related to Claim 12. Since the absence of a single element from the Ping TiSI club disposes of Karsten's motion, the Court does not construe or rely upon each and every element raised and discussed in the parties' brief. See, e.g., Wolverine World Wide, Inc. v. Nike, Inc., 38 F.3d 1192, 1199 (Fed. Cir. 1994) (the absence of a single claim limitation is dispositive on the question of non-infringement). For simplicity's sake, the Court refers to these limitations as "Claim 12" limitations.

Contrary to Karsten's argument, the golf clubs described in Claim 12 require only one wall. Claim 12 first requires that the golf clubs have "a high impact forward wall . . . having a ball impacting face *wall* with a plurality of generally parallel grooves." Col. 11, lines 14-18 (emphasis added). The context of this claim specifically and of the patent as a whole suggests that the "high impact forward wall" simply has a face, not a "face wall," with many, roughly-parallel grooves on that face. The phrase "face wall" is not used in these other claims as a shorthand for the composite plastic covering wall. Instead, in these other claims, "face wall" generically refers to the ball striking surface, regardless of whether it is metal or plastic.⁷

⁷ Another way of looking at it is that the word "wall" is used to mean two different things. First for example, by wall it means an entire structure that divides two rooms. Second, by wall it means the surface of that structure viewed from inside either of these rooms. In any case, it could not require two of the first types of walls.

Comparing Claims 1 and 12 also illustrates that the latter claim only requires one wall. By contrast to claim 12, Claim 1 requires two distinct walls – one metal and one plastic wall – so that the thickness of the metal wall can be reduced without it caving in when the golfer, swinging the club head upwards of 100 mph, hits the golf ball. In a Claim 1 golf club, a face-reinforcing matrix juts forward from the forward wall and second plastic wall provides a smooth covering surface to the matrix of supporting bars. Unlike Claim 1 and other claims in the '941 patent that describe in detail two "walls," see, e.g., Col. 9, lines 21-25, Claim 12 never mentions a separately molded, plastic covering wall. Claim 12 also does not require a reinforcing matrix of bars jutting out from the forward wall. Instead, as noted in more detail below, it simply requires a forward wall with "substantially uniform thickness." Col. 11, lines 20-21. In short, Claim 12 requires one, not two walls.

The second claim limitation upon which the parties focus is that the forward wall must have a "substantially uniform thickness inside the perimeter wall." Interpretation of this claim phrase turns on the meaning of the modifying term "substantially." The term "substantially" does not mean "essentially" or "exactly" but is a relative term which the Court interprets in context. See, e.g., John Blue Co. v. Dempster Mill Mfg., Co., 172 F. Supp. 23, 27 (D. Neb. 1958). In the context of machine-tooled metal, "where tolerances are measured in by a micrometer, "'substantially uniform thickness' . . . would call for differentials of no more than perhaps 0.001

Read any other way, the claim would require a "wall . . . having a . . . wall." This construction does not make sense and will not be adopted, see Baxter Int'l Inc. v. McGaw, Inc., No. 95 C 2723, 1996 WL 66139, *7 (N.D. Ill. Feb. 12, 1996) (rejecting claim construction that made "no sense"), despite Karsten's reliance on the examiner's reasons for allowance in support of its argument that this language requires two walls. The examiner's reasons, which purport to relate to Claims 1-14 and mention two separate walls, only state that these claims were allowed over the prior art "in part" because of the two-wall system. The two-wall system does not purport, by the examiner's own words, to be the only reason for allowance.

[inches]. But in dealing with (say) the topography of mountain ranges, 'substantially uniform' height . . . could permit differences of hundreds of feet or more." O'Hara Mfg. Ltd. v. Eli Lilly, No. 85 C 3979, 1986 U.S. Dist. Lexis 22546, at *40 n.8 (N.D. Ill. July 18, 1986). In the production of ice cream, by further contrast, a claim term requiring production temperatures "substantially" in a certain range is still satisfied by temperatures falling a degree or two outside of that range. See Dippin' Dots v. Mosey, No. 3:96-CV-1969-X, 1997 U.S. Dist. Lexis 20896, at *13-4 (N.D. Tex. Mar. 31, 1997). Implicit in these contrasting examples is the principle that the function of the thing at issue is an important consideration in defining this term. See John Blue Co., 172 F. Supp. at 27. Thus, "a thing is substantially the same as another if it performs the substantially the same function in substantially the same way to obtain the same result." Id.

The context of the term "substantially" in this case is investment cast metal. It is undisputed on the summary judgment record, that the standard tolerance for investment casting is ± 0.005 inches or $\pm 0.5\%$.⁸ Also instructive (present in Claim 12 but absent from Claim 15) is the phrase immediately following the claim phrase "substantially uniform thickness." In Claim 12, the subsequent phrase explains that the purpose of the uniform wall is to "reduce club head weight." Col. 11, lines 21-2. Reduced club head weight allows larger a club face and increases the radius of gyration, which are both focuses of the '941 Patent. This purpose supports the conclusion that substantially uniform in this context allows thickness deviations at or near the standard commercial tolerance.

Although this construction of "substantially uniform thickness" excludes *some* of the preferred embodiments from claims that contain this limitation, it does not exclude these

⁸ Vardon points out that the wall of "substantially uniform thickness" also has "a plurality of generally parallel grooves." The Court reads these two terms to co-exist in Vardon's claims and thus interprets substantial uniformity without regard to the groove depth.

embodiments from every claim in the '941 patent. In fact, the claims that specifically discuss the reinforcing matrix covered by a plastic face wall do not contain the "substantially uniform thickness" limitation. See, e.g., Claim 1, Col. 9, lines 12-25. Thus, despite some of the drawings, exceptionally wide variances in wall thickness cannot be encompassed within this limitation. Such an interpretation would impermissibly allow a drawing to contradict the plain language of the claim and render the phrase nonsensical. See, e.g., Raleigh v. Tandy Corp., No C-95-2332-MHP, 1997 U.S. Dist. Lexis 22130, *20 (N.D. Cal. Jan. 9, 1997) ("the specification may help define the terms of the claims, but the claim language is not to be contradicted by the drawings or the description of the preferred embodiments").

Comparison of the Ping TiSI Club to Claim 12 of the '941 Patent

Karsten does not contest the fact that each of the clubs in question has "a ball impacting face wall with a plurality of generally parallel grooves." Instead, it argues that Claim 12 requires two walls. Since, as noted above, the first limitation in Claim 12 does not require two separate walls, this aspect of Claim 12 is satisfied.

The Ping TiSI club, however, does not literally infringe the second (substantially-uniform-thickness) limitation for the ball-striking wall. The Ping TiSI club varies in thickness between 0.1087 inches and 0.0932 inches – the latter thickness being slightly more than 94% the thickness of the former. This variation does not meet the literal requirement of substantial uniformity. Since this limitation is completely absent, there can be no literal infringement, see, e.g. Bayer AG v. Elan Pharmaceutical Research Corp., No 99-1365, 2000 WL 572705, *5 (Fed. Cir. May 12, 2000). and there can also be no infringement under the doctrine of equivalents, see, e.g., Laitram Corp., 939 F.2d at 1535. Because the Court concludes that this aspect of Claims 12 and 15 is

completely absent from the Ping TiSI golf clubs, the other claim phrases addressed by the parties are not decided here. Karsten's motion for summary judgment on claims 12 and 15 is granted.

Conclusion

For the foregoing reasons, with respect to the '021 Patent, the Court:

GRANTS Karsten's motion for summary judgment on Claim 3 for non-infringement with respect to both literal infringement and infringement under the doctrine of equivalents;

GRANTS Karsten's motion for summary judgment on Claim 4 and Claim 5 for non-infringement with respect to both literal infringement and infringement under the doctrine of equivalents;

GRANTS Karsten's motion for summary judgment on Claim 7 for non-infringement with respect to literal infringement; but DENIES Karsten's motion for summary judgment on Claim 7 with respect to infringement under the doctrine of equivalents;

GRANTS Karsten's motion for summary judgment on Claim 8 for non-infringement with respect to literal infringement; but DENIES Karsten's motion for summary judgment on Claim 8 with respect to infringement under the doctrine of equivalents;

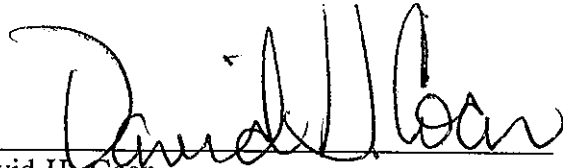
GRANTS Karsten's motion for summary judgment on Claim 12 for non-infringement with respect to both literal infringement and infringement under the doctrine of equivalents;

DENIES Karsten's motion for summary judgment on Claim 14 and Claim 15 for non-infringement with respect to both literal infringement and infringement under the doctrine of equivalents.

DENIES Karsten's motion for summary judgment with respect to its invalidity defense on the '021 Patent.

With respect to the '941 Patent, the Court GRANTS Karsten's motion for summary judgment on Claims 12 and 15 with respect to both literal infringement and infringement under the doctrine of equivalents.

Enter:

A handwritten signature in cursive script, appearing to read "David H. Coar", written over a horizontal line.

David H. Coar
United States District Judge

Dated: SEP -7 2000